

SECRETION OF ECDYSONE BY THE OVARY OF THE MOSQUITO *Aedes Aegypti* IS CONTROLLED BY A BRAIN HORMONE. H. H. Hagedorn, K. Hanaoka\* and J. P. Shapiro. Cornell University, Ithaca, N.Y.

Ecdysone controls vitellogenin synthesis in *A. aegypti* after a blood meal (Hagedorn et al. (1975) Proc. Nat. Acad. Sci. 72: 3255). A hormone from the medial neurosecretory cells of the brain is known to be necessary for egg development (Lea, A.O., (1967) J. Insect Physiol. 13:419). We found that the area of the midbrain containing these cells stimulates ecdysone synthesis by the ovary. Brains and corpora cardiaca of several other insects are also active. Net synthesis of ecdysone can be demonstrated. Adding brains ovaries and fat bodies together *in vitro* results in vitellogenin synthesis. An extract of heads also stimulates ecdysone synthesis. Synthesis is linear for 10 hours. The amount of hormone in one head stimulates a 50% response. Using the response of the ovaries to head extract as an assay we have characterized the brain hormone as a peptide with a size of approximately 6500 daltons. It is sensitive to proteases and can be partially purified by ion exchange and gel exclusion column chromatography.